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RISK ASSESSMENT FOR CONTINUOUS FLOW LEFT VENTRICULAR ASSIST DEVICES (LVAD): DOES THE DESTINATION THERAPY RISK SCORE WORK? AN ANALYSIS OF OVER 600 PATIENTS

ACC Oral Contributions
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Background: The Destination Therapy Risk Score (DTRS) was developed to predict the risk of 90 day in hospital mortality with pulsatile flow LVADs from 2002-2005 (Lietz et al CIRC 2007;116:497). However its applicability to the current era of continuous flow LVADs is unclear.

Methods: The DTRS was determined in 638 patients who received the HeartMate II continuous flow LVAD in the DT clinical trial. Patients were divided into operative risk groups based upon DTRS: low (0-8), medium (9-16), and high (>16).

Results: The overall mean age was 64 years, 22% women, 60% ischemic myopathy, and mean LVEF was 17%, with no difference between groups. As the overall DTRS progressed from low to high risk groups, individual components of the DTRS also progressively worsened: BUN 32±17 to 46±30 mg/dl, p=0.01; Albumin 3.7±0.4 to 3.2±0.6, p<0.01 mg/dL; platelet count 231±71 to 131±55x103, p<0.01.The high DTRS group had a 72% increased risk of mortality compared to low DTRS group (p=0.004). One year survival (77% vs 62%) was significantly better in the low v. high DTRS group (figure). However, goodness of fit for 90 day in hospital mortality yielded a modest c-statistic of 0.58 (p=0.012),

Conclusions: Patients receiving the HeartMate II continuous flow LVAD with the lowest DTRS have the best overall survival. However, due to improvements in patient outcomes the overall discrimination of operative mortality with the DTRS is modest. Thus, better risk prediction models developed from the current era of continuous flow LVADs are needed.